



Research Paper

Economic analysis of dairy farms in Amravati district

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ABSTRACT : The investigation was undertaken on the topic entitled “Economic Analysis of Dairy Farms in Amravati district.” with view to study the socio-economic characteristics of selected farmers, investment pattern, economics and constraint faced by farmers of dairy farms. Data on size of land holding, cropping pattern, fodder availability, milch animal owned, average milk production per day per animal, composition of herd size, educational status of head of family, family structure was collected. On the basis of high cattle population fifteen villages from three tehsil's of Amravati district were selected. The information was collected from sample of 90 dairy farmers selected by random sampling technique in a pretested questionnaire. The data were analysed with simple tabular analysis. The study revealed that the average size of family members were 4.89, 4.54 and 4.61 members for small, medium and large groups of dairy farmer, respectively and Jowar crop was the major source of fodder in combination with green grasses and maize. The annual maintenance cost of local cow and crossbreed cow was Rs.31440.74 and Rs.40969.36, respectively, while annual maintenance cost of local buffalo and improved buffalo was Rs.37780.30 and Rs.44930.51, respectively. The annual maintenance cost of local buffalo and improved buffalo was more than local cow and crossbreed cow. Feed and fodder was the major items of expenditure in milk production. Overall gross income, net cost and net income per animal per year was Rs.32870.00, Rs.29890.74 and Rs.1429.26, respectively in case of local cow. And for crossbreed cow these were Rs.60000.00, Rs.34779.80 and Rs.22419.70. Overall gross income, net cost and net income per animal per year was Rs.47100.50, Rs.34779.80 and Rs.9320.20 for local buffalo, respectively. And for improved buffalo these were Rs.70500.00, Rs.40930.51 and Rs.25569.49 per year, respectively. Out of 90 dairy farm owners 50 per cent dairy farmer faced problem of dry fodder, 83.33 per cent farmer faced problem of green fodder, 77.77 per cent farmers faced problem of concentrates and 27 per cent dairy farmer faced problem of drinking water.

KEY WORDS : Economics, Dairy farms, Investment, Constraints

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INTRODUCTION :

Dairy farming continues to be a major livelihood option for millions of small and marginal farmers in India. In the world, about 2445 million people are economically

involved in agriculture. Out of which about three-fourths are partially or wholly dependent on livestock farming. In India, about 70 per cent of the population is engaged in agriculture and rearing of livestock (mainly cattle and buffaloes) which is complimentary to agriculture.

Livestock production in India is of backward type. Moreover, the gap between achievable and achieved productivity in livestock enterprises with existing resources and infrastructure is wider than any other enterprise. (Gandhi and Sharma, 2001) As per the India's 17th livestock census, crossbreed cattle constitute 13.3 per cent of the total cattle and 86.7 per cent are indigenous cattle. Out of total livestock in the country, around 38 per cent are cattle, 20.2 per cent are buffaloes, 12.7 per cent are sheep, 25.6 per cent are goat and only 2.8 per cent are pigs. All other animals are less than 0.50 per cent of the total livestock (The Hindu Survey, 2010).

MATERIALS AND METHODS :

The study was undertaken in the Amravati district. Out of total 14 tehsil's of Amravati district, three tehsil's viz., (i) Amravati (ii) Bhatkuli (iii) Nandgaon (Kh) were selected randomly for the present study on the basis of higher cattle concentration. Amravati district was selected purposively on the basis of higher cattle concentration. 15 villages from three tehsils were selected randomly and data collected pertained to the period 2011-12. Sample of total 90 dairy farmer were stratified into 3 groups (i) Small (5 to 10 cattle) (ii) Medium (10 to 15 cattle) and (iii) Large (16 and above cattle). Sample of these farms were studied separately. Simple tabular method was used for analysis.

RESULTS AND DATA ANALYSIS :

The information regarding the distribution of selected

dairy farmer in different herd size groups is presented in Table 1. For the present study, ninety dairy farmer were selected. These ninety dairy farmer were classified into three groups viz., small, medium and large dairy farms groups, respectively. The table shows that 5 to 10 cattle herd size farmer comes in small group, 36 farms comes under this small sized dairy farm, 11 to 15 cattle herd size farmer comes in medium group 19 farms comes under medium sized dairy farm, 16 and above cattle herd size farmer comes in large groups 35 farms comes under large sized dairy farm, respectively.

Distribution of selected dairy farmers according to size of holding :

The information regarding to distribution of selected dairy farmers land holding and average size of holding in different groups is presented in Table 2. For the present study 90 dairy farmers selected for the study. Then these 90 dairy farmer were classified into three groups viz., small, medium and large, respectively (Rajendran and Prabhakaran, 1993).

In small dairy farm the investment on other assets like feeding tough, milk can, buckets, iron chain, ropes and measures was 1141.6, Rs. 675, Rs. 675, Rs. 657.2, Rs. 563 and Rs. 132.5, respectively which accounted 9.38 per cent, 5.5 per cent, 5.5 per cent, 5.40 per cent, 4.62 per cent, and 1.08 per cent of the total cost of investment, respectively.

In medium sized dairy farming the investment on other assets like feeding tough, milk can, bucket, iron chain, ropes and measures was Rs. 2147.3, Rs. 1663.1, Rs. 1518, Rs. 1557, Rs. 964.2, Rs. 287.8, respectively which was accounted 8.8 per cent, 4.8 per cent, 6.2 per

Table 1 : Distribution of selected dairy farmer according herd size

Sr. No.	Group	Herd size (No.)	No. of dairy farms
1.	Small	5 to 10	36
2.	Medium	11 to 15	19
3.	Large	16 and above	35
	Total		90

Table 2 : Distribution of selected dairy farmer according to size of holding

Sr. No.	Land holding (ha)	Dairy farm			Total
		Small	Medium	Large	
1.	Upto 2.00 ha	24 (66.66)	12 (63.15)	17 (48.57)	53 (58.88)
2.	2.01 to 5.00 ha	8 (22.22)	6 (31.57)	16 (45.71)	30 (33.33)
3.	Above 5.01 ha	4 (24.24)	1 (5.26)	2 (5.71)	7 (7.77)
	Total	36 (100)	19 (100)	35 (100)	90 (100)

cent, 6.4 per cent, 3.9 per cent and 1.18 per cent of the total cost of investment, respectively.

In large dairy farm group the investment on other assets like feeding tough, milk can, bucket, iron chain, ropes and measures was Rs. 2485, Rs. 2868.5, Rs. 1518, Rs. 2185.7, Rs. 2165, Rs. 489.14, respectively which was accounted 3.48 per cent, 4.2 per cent, 2.12 per cent, 3.06 per cent, 3.03 per cent and 0.68 per cent of the total cost of investment, respectively.

At the overall level the investment on other assets like feeding tough, milk can, bucket, iron chain, ropes, and measures was Rs. 1924.6, Rs. 1568.8, Rs. 1237, Rs.1466.6, Rs.1230.7, Rs.303.1, respectively which

accounted 5.36 per cent, 4.37 per cent, 3.44 per cent, 4.8 per cent, 3.42 per cent, 0.8 per cent of the total cost of investment, respectively.

Livestock position of the selected dairy farmers :

Livestock position of the selected dairy farmer is presented in Table 4. The total number of cows per dairy farmer were 4.00 (36.36%), 8.00 (42.10%) and 11.00 (37.93%) in small, medium and large group, respectively. Out of Which 1.00 (9.09 %), 3.00 (15.78) and 2.00 (6.89%) were dry and 3.00 (27.27%), 5.00 (26.31%), and 7.00 (24.13%) were milch cow in small, medium and large group, respectively (Kalyankar, 1980 and

Table 3 : Investment on assets and equipment of selected dairy farmers

Sr. No.	Item	Small		Medium		Large		Overall	
		Number	Value	Number	Value	Number	Value	Number	Value
1.	Feeding tough	3.80 (14.42)	1141.6 (9.38)	7.15 (16.44)	2147.3 (8.8)	10.3 (16.72)	2485 (3.48)	7.08 (16.46)	1924.6 (5.36)
2.	Milk can	2.94 (11.16)	675 (5.5)	5.3 (12.18)	1163.1 (4.8)	10.8 (17.57)	2868.5 (4.02)	6.34 (14.17)	1568.8 (4.37)
3.	Bucket	4.5 (17.08)	675 (5.5)	6.10 (14.02)	1518 (6.2)	10.3 (16.72)	1518 (2.12)	6.96 (16.18)	1237 (3.44)
4.	Iron chain	6.5 (24.67)	657.2 (5.40)	11.57 (26.60)	1557 (6.4)	14.5 (23.55)	2185.7 (3.06)	10.08 (23.44)	1466.6 (4.08)
5.	Rope	6.22 (23.61)	563 (4.62)	10.47 (24.08)	964.2 (3.9)	10.82 (17.57)	2165 (3.03)	9.17 (21.32)	1230.7 (3.42)
6.	Measures	2.38 (9.03)	132.5 (1.08)	2.89 (6.64)	287.8 (1.18)	4.85 (7.87)	489.14 (0.68)	3.37 (7.08)	303.1 (0.8)
7.	Animal shed	-	8319.4 (68.39)	-	16578.9 (68.4)	-	59571 (83.57)	-	28156.4 (78.45)
	Total	26.34(100)	12163.7(100)	43.48 (100)	24216.3 (100)	61.57 (100)	71282.3 (100)	43 (100)	35887.2 (100)

(Fig. in Table 3. shows percentage)

Table 4 : Livestock position of the selected dairy farmer

Sr. No.	Type of animal	Small		Medium		Large		Overall	
		Number	Value (Rs.)	Number	Value (Rs.)	Number	Value (Rs.)	Number	Value (Rs.)
Cow									
1.	Local cows	3.00 (27.27)	62222 (34.97)	6.00 (31.57)	114736.8 (37.26)	8.00 (27.58)	161714.2 (31.39)	6.00 (28.57)	112891.00 (33.83)
2.	Cross breed cows	1.00 (9.09)	24305.5 (13.66)	2.00 (10.52)	42105.20 (13.67)	3.00 (10.34)	73571.4 (14.28)	2.00 (9.52)	46660.70 (13.98)
	Total	4.00 (36.36)	86527.5 (48.64)	8.00 (42.10)	156842 (50.94)	11.00 (37.93)	235285.6 (45.67)	8.00 (38.09)	159551.70 (47.82)
1.	Dry	1.00 (9.10)	22083.3 (12.41)	3.00 (15.78)	38684.20 (12.56)	2.00 (6.89)	30000 (5.82)	2.00 (9.52)	30255.80 (9.06)
2.	Milch	3.00 (27.27)	64444.2 (36.22)	5.00 (26.31)	118157.8 (38.37)	7.00 (24.13)	205285.6 (39.85)	5.00 (23.80)	129295.80 (38.75)
Buffaloes									
1.	Local buffaloes	3.00 (27.27)	65972.2 (37.08)	4.00 (21.05)	100000 (32.47)	8.00 (27.58)	190000 (36.88)	5.00 (23.80)	88657.40 (26.57)
2.	Improved buffaloes	1.00 (9.09)	21666 (12.17)	2.00 (10.52)	43368.4 (14.08)	3.00 (10.34)	78000 (15.14)	2.00 (9.52)	47678.13 (14.29)
	Total	4.00 (36.36)	87638.2 (49.26)	6.00 (31.57)	143368.4 (46.56)	11.00 (37.93)	268000 (52.03)	7.00 (33.33)	166335.53 (49.85)

Khatkar *et al.*, 1995).

The total number of buffaloes per dairy farmer were 4.00 (36.36%), 6.00 (31.57%) and 10.00 (37.93%) in small, medium and large dairy farm, respectively. Out of that 1.00 (9.09%), 2.00 (10.52%) and 4.00 (13.79%) were dry and 2.00 (18.18%), 4.00 (21.05%) and 7.00 (24.13%) were milch buffaloes in small, medium and large dairy farm, respectively. Average no. of heifers were 2.00, 3.00, and 4.00 and calves 1.00, 2.00, and 3.00 of the total kept in dairy farm. The percentage contribution of heifer and calves to the total animal were 18.18, 15.78 and 13.79, per cent and 09.10, 10.52 and 10.34 per cent in small, medium and large dairy farms, respectively.

Feed and fodder :

Feeding of animals was important aspect from milk production point of view. The various type of feed used is in the form of kg per animals per year (Grover *et al.*, 1992). Data in this relation are presented in Table 5.

It was observed from the Table 5. That for local milch cow, the quantities of dry fodder, green fodder, concentrates and supplements fed were 2900.00 kg, 4200.26 kg, 350.00 kg and 12.00 kg, respectively. These items accounted for 38.86, 56.28, 4.69 and 0.16 per cent, respectively of the total feed given to animal during the year.

For crossbreed cow, the quantities of the dry fodder, green fodder, concentrate and supplement feed was 3500.00 kg, 5300.00 kg, 700.00 kg and 70.00 kg, respectively, these fed accounted for 36.57, 55.38, 7.31, and 0.73 per cent of the total feed, respectively.

In case of local buffalo, the quantities of feed the dry fodder, green fodder, concentrates and supplements feed was 3500.45 kg, 5400.00 kg, 540.00 kg and 13.20 kg, respectively. These accounted for 37.02, 57.12, 5.71, and 0.13 per cent of the total feed, respectively.

For the improved buffalo, the various quantities of given per year were dry fodder 3750.00 kg, green

fodder 6850.12.89 kg, concentrates 950.00 kg and supplements 23.50 kg. Thus, proportion of dry fodder 32.40 per cent, and green fodder 59.18 per cent in the total feed was, respectively, while share of concentrates and supplements was 8.20, 0.20, per cent, respectively.

The study thus, indicates that the major item of feed was green fodder followed by dry fodder, concentrates and supplements. The proportion of green fodder accounted for highest of the total feed followed by dry fodder, concentrates, supplements.

Annual maintenance cost of local cow :

Data on maintenance cost of local cow per year are depicted in Table 6. It could be seen from Table 6 that the total maintenance cost of local cow was Rs. 31440.74 per year. The total variable cost was Rs. 28950.89 (92.08%) while the fixed cost was Rs. 2489.85 (7.91%). The feed cost such as dry fodder, green fodder, concentrates and supplement taken together accounted for about 45.54 per cent of the total cost of maintenance. The upkeep charges, miscellaneous charges, interest on working capital, depreciation and interest on fixed capital accounted for 34.35, 1.59, 10.59, 2.64 and 5.27 per cent of the maintenance cost (Sangu, 1995 and Sharma and Singh, 1994).

Annual maintenance cost of crossbreed cow :

Annual maintenance cost of crossbreed cow was presented in Table 6. It was observed from the Table 6 that the total feed cost was Rs. 21400 and total maintenance cost was Rs. 40969.36. The variable cost Rs. 35394 (86.39%) was the major items of cost and fixed costs were Rs. 3885.70 (8.75%) of the total cost, respectively.

The feed cost such as dry fodder, green fodder, concentrates and supplement taken together accounted for about 52.23 per cent of the total cost of maintenance. The upkeep charges, miscellaneous charges, interest on

Table 5: Quantities of different feeds given to animals

		(kg per animal per year)			
Sr. No.	Particulars	Local cow	Crossbreed cow	Local buffalo	Improved buffalo
1.	Dry fodder	2900.00 (38.86)	3500.00 (36.57)	3500.45 (37.02)	3750.00 (32.40)
2.	Green fodder	4200.26 (56.28)	5300.00 (55.38)	5400.00 (57.12)	6850.12 (59.18)
3.	Concentrates	350.00 (04.69)	700.00 (7.31)	540.00 (5.71)	950.00 (8.20)
4.	Supplements	12.00 (0.16)	70.00 (0.73)	13.20 (0.13)	23.50 (0.20)
	Total	7462.26 (100.00)	9570.00 (100.00)	9453.65 (100.00)	11573.62 (100.00)

Note : Figure indicate percentage to total feed

working capital, depreciation and interest on fixed capital accounted for 29.80, 1.22, 3.13, 4.89 and 8.75 per cent of the maintenance cost.

Annual maintenance cost of local buffalo :

Annual maintenance cost of local buffalo was presented in Table 6. It was observed from the Table 6. That the total maintenance cost of local buffalo was Rs.37780.30 per year. The total cost includes variable cost Rs. 30904.60 (81.80%) was the major items of cost and fixed costs were Rs. 6875.70 (18.195) of the total cost, respectively.

Feed cost is one of the major items which accounted 50.32 per cent share to the total maintenance cost while interest on working capital upkeep charges and miscellaneous charges accounted 27.13 per cent, 1.32 per cent and 3.01 per cent share to the total maintenance cost, respectively. Out of total fixed cost of Rs.6875.70, depreciation cost and interest on fixed capital accounted 7.91 per cent and 10.28 per cent share to the total maintenance cost of local buffalo.

Annual maintenance cost of improved buffalo :

Annual maintenance cost of improved buffalo was presented in Table 6. It was observed from the table, that the total maintenance cost of improved buffalo was Rs.44930.51 per year.

Out of total maintenance cost if improved buffalo

variable cost accounted 86.45 per cent share while fixed cost accounted 13.54 per cent share, respectively. The items of variable costs like feed cost upkeep charges, interest on working capital and miscellaneous charges accounted 57.83 per cent 24.03 per cent 3.47 per cent and 1.11 per cent share to the total maintenance cost while in fixed cost, interest on fixed capital and depreciation charges accounted 8.64 per cent and 4.89 per cent share in total maintenance cost of improved buffaloes.

Economics of milk production of dairy farmer :

Economics of milk production for local cow :

Economics of milk production for local cows are presented in Table 7. It was observed from Table 7 that total maintenance cost per year was Rs. 31440.74. The total milk production per year was 1080.00 lit. The total value of milk from local cow was Rs. 31320.00, value of manure Rs. 900.00 and value of young stock was Rs. 650.00. Gross income was Rs. 32870.00 (Kodaskar, 1995 and Saha and Gupta, 2000).

Net income was worked out by deducting the total maintenance cost from gross income and it was Rs. 1429.26 per year. Net cost was worked by deducting the income from manure and value of young stock from the total maintenance cost and it was recorded Rs. 29874.74 (Karla *et al.*, 1994 and Kazade *et al.*, 2002).

The study shows that the per lit cost of milk production for local cow as Rs. 27.67 while the net profit

Table 6: Annual maintenance cost of local cow, crossbreed cow, local buffalo and improved buffalo					(Cost in Rs. Per animal per year)
Sr. No.	Particulars	Local cow	Crossbreed cow	Local buffalo	Improved buffalo
Variable cost		Cost (Rs.)			
1.	Feeds				
	Dry fodder	5800.00 (18.44)	7000.00 (17.08)	7000.90 (18.53)	7500.00 (16.69)
	Green fodder	4200.26 (13.35)	5300.00 (12.93)	5400.00 (14.29)	6850.12 (15.24)
	Concentrates	4200 (13.35)	8400.00 (20.50)	6480.00 (17.15)	11400.00 (25.37)
	Supplementary	120 (0.38)	700.00 (1.70)	133.00 (0.35)	235.00 (0.52)
	Total feed cost	14320.26 (45.54)	21400.00 (52.23)	19013.90 (50.32)	25985.12 (57.83)
2.	Upkeep charges	10800.00 (34.35)	12210.80 (29.80)	10250.70 (27.13)	10800.09 (24.03)
3.	Miscellaneous expanses	500 (1.59)	500.00 (1.22)	500 (1.32)	500 (1.11)
4.	Interests on working capital	3330.63 (10.59)	1284.00 (3.13)	1140.08 (3.01)	1559.10 (3.47)
	Total variable cost	28950.89 (92.08)	35394.00 (86.39)	30904.60 (81.80)	38844.31 (86.45)
Fixed cost					
1.	Depreciation	831.96 (2.64)	1986.66 (4.89)	2990.00 (7.91)	2200.50 (4.89)
2.	Interest on fixed capital@10%	1657.89 (5.27)	3588.70 (8.75)	3885.70 (10.28)	3885.70 (8.64)
	Total fixed cost	2489.85 (7.91)	5575.36 (13.60)	6875.70 (18.19)	6086.2 (13.54)
	Total cost	31440.74 (100)	40969.36 (100.00)	37780.30 (100.00)	44930.51 (100.00)

Note : Figure indicate percentage to total cost

per lit was Rs.1.33. Finally the table shows that the output-input ratio for local cow was 1:1.04.

Economics of milk production for crossbreed cow

Economics of milk production for crossbreed cow presented in Table 7. It was observed from Table 7 that the total maintenance cost per year was Rs. 40969.36, however, the total milk production per year was 2000.00 litres and the total value of milk was Rs. 58000, value of manure was Rs. 1200.00 and value of young stock was Rs. 1000.

The Table 7 also shows that, the gross income from value of milk, income from manure and value of young stock, was Rs. 60000 While net income was worked out by deducting the total maintenance cost from gross income and it was Rs. 22419.70 per year and net cost was worked by deducting the income from manure and

value of young stock from the total maintenance cost and it was recorded Rs. 34779.80 (Gupta and Agarwal, 1996).

The Table 7 also revealed that, the per lit cost of milk production was Rs.17.38 while net profit per lit of milk was Rs. 11.62. The output-input ratio was 1:1.66.

Constraints faced by the dairy farmer :

It has been observed that from the Table 8. The problem faced by producers is in respect of shortage of green fodder, dry fodder concentrate, non-availability of shed, non-adoption of new technology veterinary aids, drinking water problem, grazing yard problem, non-availability of finance at cheaper rate of interest, lack of awareness about cattle insurance, transportation etc. (Kumar and Singh, 1980).

Table 7: Economics of milk production of dairy farmer

Sr. No.	Particulars	Local cow	Cross –breed cow	Local buffalo	Improved buffalo
1.	Total maintenance cost per year Rs.	31440.74	40969.36	37780.30	44930.51
2.	Income from manure Rs.	900.00	1200.00	1000.50	1500.00
3.	Total milk production (Ltr.)	1080.00	2000.00	1260.00	1900.00
4.	Value of milk Rs.	31320.00	58000.00	44100.00	66500.00
5.	Value of young stock Rs.	650.00	1000.00	2000.00	2500.00
6.	Gross income (2+4+5)	32870.00	60000.00	47100.50	70500.00
7.	Net income(6-1)	1429.26	22419.70	9320.20	25569.49
8.	Net cost (1-2-5)	29890.74	34779.80	34779.80	40930.51
9.	Cost per litre of milk production Rs. (8/3)	27.67	17.38	27.60	21.54
10.	Price per litre of milk Rs.	29.00	29.00	35.00	35.00
11.	Net profit per litre of milk Rs.(10-9)	1.33	11.62	7.40	13.46
12.	Output-input ratio (10/9)	1:1.04	1:1.66	1:1.26	1:1.62

Table 8 : Problem faced by dairy farmer

Sr. No.	Problem faced by milk producers	Frequency	Percentage (%)
1.	Dry fodder problem	45	50.00
2.	Green fodder problem	75	83.33
3.	Concentrate problem	70	77.77
4.	Water problem	25	27.77
5.	Grazing yard problem	55	61.11
6.	Shed problem	75	83.33
7.	Non-adoption of new technology problem	30	33.33
8.	Non-availability of doctor at proper time	55	61.11
9.	Non-availability of finance at cheaper rate of interest.	40	44.44
10.	Lack of awareness about cattle insurance	30	33.33
11.	Transportation	30	33.33

It can be revealed from the table that problem regarding shortage of dry fodder was faced by 45, dairy farmer, *i.e.* 50.00 per cent. The problem of green fodder faced by 75 dairy, *i.e.* 83.33 per cent. The problem of concentrate faced by 70, *i.e.* 77.77 per cent. The problem of drinking water was faced by 25 per cent *i.e.* 27.77 per cent, grazing yard problem was faced by 55 dairy farmer *i.e.* 61.11 per cent. Non-availability of shed problem was faced by 75 dairy farmer *i.e.* 83.33 per cent, non-adoption of new technology was faced by 30 dairy farmer *i.e.* 33.33 per cent and non-availability of doctor at proper time was faced by 55 dairy farmer *i.e.* 61.11 per cent, non-availability of finance at cheaper rate of interest was faced by 40 dairy farmer *i.e.* 44.44 per cent, lack of awareness about cattle insurance was faced by 30 dairy farmer *i.e.* 33.33 per cent, transportation problem was faced by 30 dairy farmer, *i.e.* 33.33 per cent etc.

Summary :

On an average, the selected dairy farmer were 10.29 animals comprising of 4.08 cow, 3.35 buffalo, 2 heifers and 0.86 calves. Average value of animals per dairy farmer was Rs. 333622.39 dairy farmer used to keep different assets, which valued at Rs. 35887.2. The major item of capital investment was animal shed.

The total quantities of feed given to local cow, crossbreed cow, local buffalo and improved buffalo was 7462.26 kg, 9570.00 kg, 9453.65 kg and 11573.62 kg, respectively. The major items of feed were green fodder followed by dry fodder, concentrate and supplement.

The total maintenance cost per local cow was Rs. 31440.74 per year. The variable and fixed cost accounted for 92.08 per cent and 7.91 per cent to the total cost, respectively. Feed cost is major cost of milk production and accounted for 45.54 per cent followed by upkeep charge, accounted for 34.35 per cent to the total cost. The total maintenance cost per crossbreed cow was Rs. 40969.36 per year. The variable and fixed cost accounted for 86.39 per cent and 13.60 per cent to total cost, respectively. Feed cost is major cost of milk production and accounted for 52.23 per cent to the total cost.

The total maintenance cost per local buffalo was Rs. 37780.30 per year. The variable and fixed cost accounted for 81.80 per cent and 18.19 per cent to the total cost, respectively. Feed cost is major cost of milk production and accounted for 50.32 per cent, followed by upkeep charges, accounted for 27.13 per cent to the

total cost.

The total maintenance cost per improved buffalo was Rs. 44930.51 per year. The variable and fixed cost accounted for 86.45 per cent and 13.54 per cent to the total cost, respectively. Feed cost is major cost of milk production and accounted for 57.83 per cent followed by upkeep charges, accounted for 24.03 per cent to the total cost.

Total milk production from cow, crossbreed cow, local buffalo and improved buffalo was 1080.00 lit, 2000.00 lit, 1260.00 lit and 1900.00 lit, respectively.

The gross income from local cow, crossbreed cow, local buffalo and improved buffalo was Rs. 37870.00, Rs. 60000.00, Rs. 47100.50 and Rs. 70500.00, respectively.

The net cost for local cow, crossbreed cow, local buffalo and improved buffalo was Rs. 29890.74, Rs. 34779.80, Rs. 34779.80 and Rs. 40930.51, respectively.

The cost per lit of milk from local cow, crossbreed cow, local buffalo and improved buffalo was Rs. 27.67, Rs. 17.38, Rs. 27.60 and Rs. 21.54, respectively.

The net profit per lit of milk from local cow, crossbreed cow, local buffalo and improved buffalo was Rs. 1.33, Rs. 11.62, Rs. 7.40 and Rs. 13.46, respectively.

The output input ratio from local cow, crossbreed cow, local buffalo and improved buffalo was 1:1.04, 1:1.66, 1:1.26, and 1:1.62, respectively.

Problem faced by milk producers were lack co-ordination between extension worker and farmer, price fluctuation from period to period during the year, dairy farmers don't have facility for preservation of milk in chilling centre, private veterinary aids charges exorbitant fees, cost of dry Jowar fodder always high due to scarcity of green and dry fodder.

Conclusion :

The study concluded that the feed and fodder cost were the most important items of the total maintenance cost of all the type of animal study. There is an imperative need to reduce the cost of producing green fodder, dry fodder and concentrates. There by reducing the cost of milk production.

The milk production from the local cow breeds of cow and buffalo was very low as compared to crossbreed cow and improved buffalo. There is a scope for further increasing the milk yield by following suitable cross breeding programme.

Gross income from cross breed cow and improved buffalo was the highest as compared to local cow and

local buffalo.

The net income from crossbred cow was highest Rs. 22419.70 as compare to local cow *i.e.* Rs. 1429.26.

The net cost from crossbreed cow and improved buffalo was highest Rs. 34779.80 and Rs. 40930.51, respectively as compare to local cow and local buffalo.

The cost per lit of milk from crossbreed cow was less Rs.17.38 as compare to local cow *i.e.* Rs. 27.67.

The cost per lit of milk from improved buffalo was less Rs. 21.54 as compare to local buffalo *i.e.* 27.60.

The net profit per lit from crossbreed cow and improved buffalo was highest *i.e.* Rs. 11.62 and Rs. 8.46, respectively as compare to local cow and local buffalo.

Lack of co-ordination between extension workers and farmers, lack of storage facilities for preservation of milk chilling centre, highest cost of fodder, feed and private veterinary aids charges exorbitant fees were the major problems faced by milk producer.

From the economic point of view rearing of crossbred cow and improved buffalo was more profitable than local cow and local buffalo. The farmer is advised that to rear crossbreed cow and improved buffalo because the yield level of crossbreed cow and improved buffalo is more than that of local cow and local buffalo.

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